Type: Non-corrosive biological poultry litter treatment	**Mechanism:** Biological conversion, lignin carbon addition, chelation, Competitive Exclusion	**Output:** Ammonia converted to ammonium nitrate fertiliser

GEARTH BioLitter is a chemical-free, non-corrosive poultry litter treatment delivering ammonia, pathogen and odour control through a proprietary microbial consortium rather than acidification. It raises flock health by establishing a continuously working protective biological barrier across the litter bed.

Ammonia is the single most destructive compound a poultry operation generates. Above pH 7.2 it volatilises as a gas with well-documented welfare consequences for the birds and equally well-documented corrosion consequences for fasteners, heaters, walls, ceilings and every other metal component in the house — as well as plastics, concrete and timber. Conventional practice fights this by acidifying the litter, an escalating cycle of harsh corrosive chemicals and costly ventilation. GEARTH BioLitter removes the ammonia instead of chasing its pH.

1 MODE OF ACTION

Biological Conversion: A proprietary microbial consortium targets ammonia and permanently converts it into ammonium nitrate fertiliser, removing the compound from the house rather than temporarily suppressing its volatility.

Lignin / Carbon Balance: Ammonia gas levels rise when the litter bed is carbon-deficient — when available carbon is less than that required to convert available nitrogen into protein. GEARTH BioLitter adds considerable carbon in the form of lignin and makes better use of the carbon already present, eliminating excess nitrogen as a resource rather than releasing it as ammonia.

Organic Acid Chelation: The formulation further reduces free ammonia through chelation by organic acids.

Competitive Exclusion: The applied cultures rapidly outcompete pathogens for food and space, colonise the litter bed and starve the pathogen population out.

2 THE PATHOGEN RESISTANCE PROBLEM

Pathogens in a poultry environment naturally develop resistance and immunity to the substances used against them — harsh chemicals, disinfectants, sanitisers and antibiotics. Each cycle they become harder to kill, and each cycle demands harsher chemistry and more costly disinfectants.

GEARTH cultures are safe, naturally occurring probiotics that are not genetically modified in any way. Every few drops of product carries tens of millions to billions of beneficial organisms. On application they immediately compete for food and space, outcompete the harmful population, reproduce exponentially and colonise the area. The pathogens starve and die off. Critically, where conventional disinfectants stop working shortly after application, the biological process continues for hours and days afterwards — so the healthy flock environment is sustained rather than momentary.

3 KEY FEATURES & BENEFITS

- Non-corrosive — protects fasteners, heaters, walls, ceilings, plastics, concrete and timber
- Permanently converts ammonia into ammonium nitrate fertiliser
- Adds lignin carbon to correct the litter bed's carbon-to-nitrogen balance
- Reduces free ammonia through organic acid chelation
- Controls pathogens by Competitive Exclusion — no resistance build-up

- Continues working for hours and days after application, unlike disinfectants
- Reduces reliance on costly ventilation for ammonia management
- Improves flock health and welfare through a continuously working protective barrier
- Cultures are naturally occurring and not genetically modified
- Removes the escalating cycle of harsh acidic litter chemistry

4 APPLICATIONS

- Broiler houses — ammonia, pathogen and odour control across the grow-out cycle
- Layer and breeder operations
- Litter bed treatment between placements and during the cycle
- Poultry coops, aviaries and small-scale operations
- Any poultry facility where equipment corrosion or ventilation cost is driven by ammonia

5 DIRECTIONS FOR USE

- Step 1 — Assess: Establish baseline ammonia readings and litter condition before first treatment.
- Step 2 — Prepare: Break up caked litter so the treatment can distribute evenly through the bed.
- Step 3 — Apply: Apply evenly across the litter bed. Contact GEARTH for the application rate matched to house size, litter depth, stocking density and ammonia load.
- Step 4 — Monitor: Track ammonia levels and litter condition; biological control strengthens with successive applications.
- Step 5 — Maintain: Re-apply through the cycle and at litter turnover. Do not apply disinfectants, sanitisers or harsh chemicals to the treated litter — these destroy the active cultures.

6 TECHNICAL SPECIFICATIONS

Formulation Type	Proprietary microbial consortium with lignin carbon source and organic acid package
Target Compound	Ammonia — converted to ammonium nitrate fertiliser
Secondary Targets	Poultry-house pathogens and odour compounds
Mechanisms	Biological conversion, lignin carbon addition, organic acid chelation, Competitive Exclusion
Corrosivity	Non-corrosive — safe on metal, plastic, concrete and timber components
Culture Status	Naturally occurring; not genetically modified
Persistence	Biological activity continues for hours to days after application
Ammonia Chemistry Reference	Ammonia volatilises as a gas above pH 7.2 and converts to ammonium below it
Chemical Incompatibility	Disinfectants, sanitisers, high chlorine concentrations and acidic litter treatments destroy the active cultures
Country of Manufacture	South Africa

7 STORAGE & SHELF LIFE

Storage Conditions	Store sealed in a cool, dry area out of direct sunlight and away from moisture.
Handling	Formulated with bio-based, low-toxicity ingredients. Wear appropriate PPE during handling and application.

This Technical Data Sheet reflects GEARTH's current product specification and application guidance at the date of issue. GEARTH (Pty) Ltd continually develops its formulations and reserves the right to revise specifications without prior notice. Because site conditions, substrates and effluent loads vary, the user remains responsible for confirming suitability for a specific application — GEARTH technical staff are available to assist with site-specific dosing and trial protocols. Handle all products in accordance with the applicable Safety Data Sheet and South African health, safety and environmental legislation.